

PREASSESSMENT SCREEN DETERMINATION

FOR

THE ST. LAWRENCE ENVIRONMENT

IN THE VICINITY OF

MASSENA, NEW YORK

MAY 14, 1991

prepared by

THE TRUSTEES FOR NATURAL

RESOURCES

THE ST. REGIS MOHAWK TRIBE

**THE NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION**

**THE STATE OF NEW YORK, DEPARTMENT OF ENVIRONMENTAL
CONSERVATION**

THE U.S. DEPARTMENT OF THE INTERIOR

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I. INTRODUCTION

This determination concerns potential claims for damages to natural resources authorized by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) § 107(f), 42 U.S.C. §9607(f), as amended. This determination recognizes that there is a reasonable probability that a claim for damages to aquatic, terrestrial, air, and other resources within the trusteeships of the U.S. Department of Interior, the National Oceanic and Atmospheric Administration (NOAA), the State of New York, and the St. Regis Mohawk Tribe exists in this case on the basis of a review of relevant information gathered as of this date. Although this preassessment screen determination conforms to the Federal Natural Resource Damage Assessment Regulations found at 43 C.F.R. Part 11, Subpart B (1988), the trustees specifically reserve the decision of whether and to what extent those procedures should be utilized to assess damages in this case.

II. AUTHORITIES AND DELEGATIONS

This determination was prepared under the authority of Section 107(f) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §9607 (f), and other applicable Federal, State and Tribal laws, regulations and directives which serve to designate Federal, State, and Tribal natural resource trustees and which authorize the recovery of natural resource damages.

III. IDENTIFICATION OF NATURAL RESOURCES POTENTIALLY AT RISK

A. Hazardous Substances Released

The following substances are the particular pollutants released or suspected to have been released into the geographic areas of concern in this case:

- Polychlorinated biphenyls (PCBs).
- Polychlorinated dibenzo-p-dioxins (PCDDs)
- Polychlorinated dibenzo-p-furans (PCDFs)
- Polycyclic aromatic hydrocarbons (PAHs)
- Trace elements (aluminum, arsenic, barium, cadmium, copper, lead)
- Fluorides.

With the exception of fluorides, these are hazardous substances as that term is defined by Section 101(14) of CERCLA and are listed as toxic pollutants pursuant to 33 U.S.C. § 1317 (a) and 40 C.F.R. § 401.15. Fluoride is not designated as a hazardous substance, but Section 111(d)(1) of the Clean Air Act requires States to establish emission standards for certain existing sources. Existing primary aluminum reduction plants, which includes two of the three aluminum industrial facilities mentioned below, are categorized as sources under this designation.

B. Areas of Exposure

The following areas, collectively known as the St. Lawrence Environment, are those which have been presently identified and into which significant quantities of PCBs and possibly PCDDs, PCDFs, PAHs, trace elements, and fluorides have been released, as discussed below. The U.S. Department of Interior, NOAA, the State of New York, and the St. Regis Mohawk Tribe believe that natural resources within their trust have been injured.

1. The St. Lawrence River. This area includes the surface waters, sediments, submerged lands and associated wetlands of the St. Lawrence River and tributaries from the mouth of the Grasse River downstream to the base of Lake St. Francis. High concentrations of PCBs, PAHs, and trace elements are found in the sediments adjacent to outfalls from two industrial aluminum facilities that discharge into the St. Lawrence River [i.e., the General Motors Corporation - Central Foundry Division (GM Foundry) aluminum casting plant and the Reynolds Metals, Inc. (Reynolds Metals) aluminum reduction plant]. Both companies have state pollutant discharge elimination system (SPDES) permits issued by the State of New York under the National Pollutant Discharge Elimination System to discharge waters via these outfalls. It should be noted that the Reynolds Metals SPDES permit did not allow Reynolds Metals to discharge any PCBs.

2. The Grasse River. This area includes the surface water, sediments, submerged lands, and associated wetlands of the Grasse River from the Massena Power Canal downstream approximately 10 km to its confluence with the St. Lawrence River. High concentrations of PCBs, PAHs, and aluminum are found in this reach, particularly in sediments downstream of outfalls from a third aluminum facility in the local area, an aluminum reduction plant owned and operated by the Aluminum Company of America (ALCOA).

3. The Raquette River. This area includes the surface waters, sediments, submerged lands, and associated wetlands of the Raquette River from the Reynolds Metals site downstream for approximately six and one-half km to its confluence with the St. Lawrence River. Elevated concentrations of PCBs, PAHs, and several trace elements are found in the sediments of this reach of the river, particularly downstream of an inactive outfall from the GM Foundry.

4. The general area of Massena, New York, offers an atmosphere supporting a mosaic of forests, wetlands, water bodies, tributary streams, and farmlands that provides a habitat for breeding, juvenile rearing and forage by wildlife, including migratory and game birds, mammals, reptiles, amphibians, as well as fish, and a myriad of other forms of plant and animal life. High concentrations of PCBs have been observed in several species of migratory and resident birds, mammals, reptiles, amphibians, and fish. PCBs have been detected in vegetation, and evidence of fluoride poisoning has been observed in several plant species.

5. St. Regis Mohawk Tribe areas of concern. The areas of concern to the St. Regis Mohawk Tribe include all land, water, and air within the St. Regis Mohawk Reservation and the historical areas of *Akwesasne*, the traditional lands, water, and air of the Mohawk people. This area further includes a stream known as Turtle Creek adjacent to the GM Foundry site and portions of the Raquette and St. Lawrence Rivers that are on or adjacent to the Reservation or within traditional hunting or fishing territory protected by treaty rights and Federal and Tribal law. This area also includes wetlands and terrestrial habitats of

Akwesasne that support aquatic and terrestrial life. The natural resources of *Akwesasne* are of special concern because they hold great spiritual, cultural, aesthetic, intrinsic, historical, recreational, and economic values.

6. Groundwater resources. This area includes potentially impacted aquifers defined as those geologic units in which saturated conditions exist beneath the GM Foundry, ALCOA, and Reynolds Metals sites and in the surrounding areas beneath Massena, New York and the St. Regis Mohawk Reservation. High concentrations of PCBs have been found in the groundwater beneath the GM Foundry site. PCBs have also been observed in groundwater beneath the ALCOA and Reynolds Metals facilities, although additional investigation is necessary to determine the extent of contamination beneath these two sites.

7. Geologic resources. This area includes potentially impacted mineral resources within New York's northernmost physiographic province, called the St. Lawrence Lowlands. Mineral resources actively mined in the Massena, New York area include six sand and gravel mines and one topsoil mine. Essentially no data have been gathered, and there is no available information to date, on the impacts to these mining operations or other geological resources in the Massena/St. Lawrence River area.

C. Probable Pathways

The following are the likely pathways of transport for PCBs, PCDDs, PCDFs, PAHs, trace elements, and/or fluorides to the above described areas of exposure:

1. Industrial wastewater discharge through two SPDES -permitted outfalls, surface water runoff, and groundwater discharge at the GM Foundry property. PCBs were used at the GM Foundry as a component of hydraulic fluids in die-casting machinery. These machines generated 2,000 psi of pressure and caused leakage of hydraulic fluid. Until 1989, PCBs from the die-casting operations were discharged via one outfall to the St. Lawrence River and one outfall to the Raquette River. Since January 1989, the discharge to the Raquette River outfall has been rerouted to the St. Lawrence River outfall. The contaminants of concern in contaminated soils, fill and sludges on the site have also entered the Raquette and St. Lawrence Rivers as either a constituent of nonpoint runoff from various industrial areas or of the noncontact water that is reported to have been carried to the Raquette River via the formerly permitted outfall. Contaminated groundwater beneath the site flows to the north and northeast toward the St. Lawrence River and the unnamed tributary stream on the St. Regis Mohawk Reservation. These pathways have likely been active from 1959 to the present.

2. Industrial wastewater discharge through four outfalls, surface water runoff, and groundwater discharge from the ALCOA site, which is located approximately 15 km from the GM Foundry along the Grasse River. None of the available information gathered adequately describes the use of PCBs on the facility. However, PCB contaminated effluents and surface runoff are collected by ALCOA's wastewater system and discharged to the Grasse River through the four outfalls [note: ALCOA has five identified outfalls, but one of these (006) commingles with another (001) prior to discharge into the Grasse River]. Nonpoint surface runoff and contaminated groundwater may also discharge directly to the Grasse River through three of the outfalls while the fourth discharges to a power canal which runs along the western site border which ultimately discharges into the Grasse River. These pathways are presently active. It is not known how long PCBs and other contaminants of concern have been discharged from the ALCOA site.

3. Industrial discharge through four outfalls, surface water runoff, and groundwater discharge from the Reynolds Metals site, which is located approximately 1.5 km upstream of the GM Foundry, on the St. Lawrence River. Fluids contaminated with PCBs were used in the heat transfer system at the Reynolds Metals facility. Most contaminated wastewater and surface runoff generated by plant operations are collected by the wastewater system at the site and discharged to the St. Lawrence River through the four outfalls. Nonpoint surface runoff and contaminated groundwater may also discharge to the St. Lawrence River and the Raquette River. Contaminated groundwater and runoff also discharge to a marshy area known as the "West Marsh" which drains to the Raquette River. These pathways have likely been active from 1958 to the present

4. Discharge of gaseous and particulate fluorides through stack releases at the ALCOA and Reynolds Metals facilities and subsequent deposition on and adsorption to vegetation. The quantities transported and duration of transport are unknown at this time, pending further investigation.

5. Desiccation and subsequent airborne transport of PCB-contaminated soils and sediments, as well as the volatilization of PCBs; adsorption to particulate matter; and subsequent airborne transport. The quantities transported and duration of transport are unknown at this time, pending further investigation.

D. Suspected Sources of Toxic Pollutants

1. Polychlorinated biphenyls comprise a class of 209 chlorinated aromatic hydrocarbon compounds. PCBs are characterized by extreme stability, low solubility in water, and long-term persistence in the environment. PCB-containing fluids have a wide variety of industrial applications, including use in electrical, heat transfer, and hydraulic systems. Environmental concerns stopped the manufacture of PCBs in 1977; however, they continue to be present in many industrial applications.

PCBs were used at the GM Foundry, ALCOA, and Reynolds Metals sites in the aluminum production and casting process. At the GM Foundry, these substances were used from 1959 until 1973. At Reynolds Metals, it is suspected that PCBs were used soon after the plant began operations in 1958 to about 1973 or later. At ALCOA, which began operations in 1903, PCBs may have been used as early as 1929, when they were first manufactured.

During these time periods, production wastewaters contaminated with PCBs were discharged through the outfalls of the three facilities into the St. Lawrence, Raquette, and Grasse Rivers. Although PCBs are no longer manufactured, the discharge of low level PCB contaminated effluents through the facilities' outfalls is still occurring.

At the GM Foundry site, approximately 26,400 liters of PCB-contaminated hydraulic fluid that has leaked from the die-casting equipment flows into the facility's wastewater system each year. In the early 1960s, hydraulic fluid was recovered by a reclamation process and subsequently discharged to a lagoon, which emptied into the St. Lawrence River. In 1976, a closed loop wastewater treatment system was installed, although wastewater was intermittently discharged to the lagoon and river. In 1985, the discharge lagoon was hydraulically isolated from the wastewater system. Currently, approximately 950,000 liters per day of treated wastewater are discharged into the St. Lawrence River through a SPDES permit. This permit was issued in 1980 and allows a maximum PCB concentration of 2 µg/L.

At the Reynolds Metals site, fluids containing high concentrations of PCBs were formerly used in the heat transfer system of the plant area. Leaks and spills are known to have occurred, and high levels of PCBs in the soils have been detected near the plant area. Although PCBs are present in effluents and drainageways at the Reynolds Metals facility, no PCB discharges are authorized by the company's SPDES permit.

For the ALCOA site, none of the available information gathered adequately describes the use of PCBs on the facility. However, environmental investigations found PCBs in seven active and inactive areas on the site. These areas contribute leachate and effluent contaminated with PCBs to the Grasse River. In 1985, ALCOA was issued a SPDES permit allowing a maximum PCB concentration of 10 µg/L in their discharge to the Grasse River. In 1987, the permit was modified to allow a maximum concentration of 2 µg/L PCBs.

The magnitude of existing PCB contamination downstream of the three sites cannot be attributed solely to permitted discharges. Mass balance and sediment loading calculations indicate that GM Foundry and ALCOA discharged PCBs far in excess of that allowed in their current SPDES permits. (Such calculations were not conducted for the Reynolds Metals site.) The mass of PCBs in the St. Lawrence River adjacent to the GM Foundry site was estimated at 6,100 kg, which is three orders of magnitude greater than the permitted discharge (<4.5 kg). For the Grasse River adjacent to the ALCOA site, the estimated PCB mass of 76 kg is more than 3 times as great as the mass allowed under their permit (<22.7 kg).

2. PCDDs and PCDFs are classes of refractory, lipophilic, and highly toxic compounds (acutely toxic responses have been observed in the parts-per-trillion range) chemically similar to PCBs. These substances exhibit the same stability and long-term persistence in the environment as do PCBs. None of the available information gathered discussed the possible presence of PCDDs and PCDFs on the three sites, but these substances are found as contaminants in PCB fluids and are formed during manufacture or when the fluids are used in high temperature applications. It is believed that some PCDDs and PCDFs are formed during the incomplete combustion of a wide variety of compounds, including PCBs.

3. Polycyclic aromatic hydrocarbons (PAHs) comprise a large class of organic compounds that contain two or more fused aromatic rings. PAHs are produced largely by incomplete combustion of organic compounds. While none of the available information gathered adequately describes the specific uses of PAHs on the three facilities, the available information does indicate the presence of PAHs at all three facilities. Waste effluents from aluminum operations, in general, provide a direct route of entry for PAHs to aquatic ecosystems. PAHs have low solubilities in water and moderate persistence in the environment. PAHs are moderately toxic, causing acute toxicity to aquatic organisms generally between 250 and 5,000 µg/L.

4. Trace elements are naturally present in the environment at low concentrations but levels are often increased due to industrial activities. None of the information gathered adequately describes the use of trace elements at the three sites, but they are often impurities in hydrocarbons and chemicals used in industrial applications. Some of the elements, such as cadmium, mercury, and copper, can be toxic to aquatic organisms at relatively low concentrations (generally between 1 and 500 µg/L).

5. Fluoride is an inorganic substance that can be released into the air as a gas or as particulates, or dissolved in fluids and discharged as effluent. This substance is commonly used in the aluminum production process and data indicate that fluorides have likely been

released from the three aluminum facilities via air stacks and outfalls. Fluoride at fairly low concentrations (<500 µg/L) is known to elicit avoidance responses in migrating anadromous salmonids.

PCDDs, PCDFs, PAHs, trace elements, and fluorides have not been fully characterized in environmental media downstream from the GM Foundry, ALCOA, and Reynolds Metals sites. Several PAHs, aluminum, arsenic, barium, cadmium, copper, and lead were found at elevated concentrations in sediments immediately downstream of the GM Foundry, but only 8 of 39 sediment samples collected were analyzed for these substances. PCDDs and PCDFs were not detected, but even fewer samples were analyzed for these substances. Of those that were, matrix interferences caused highly variable detection limits. Environmental investigations at the ALCOA and Reynolds Metals sites have concentrated primarily on the distribution of PCBs in downstream sediments and not on other contaminants that may be associated with aluminum reduction activities.

IV. PREASSESSMENT SCREEN DETERMINATION CRITERIA

A. Satisfaction of Criteria of 43 C.F.R. § 11.23(e)

1. Releases of hazardous substances have occurred.

The release of PCBs has been documented from the GM Foundry, Reynolds Metals and ALCOA sites. Exceptionally high concentrations of PCBs are found in the sediments immediately downstream of the GM Foundry and Reynolds Metals outfalls on the St. Lawrence, downstream of the ALCOA outfall on the Grasse River, and downstream of the GM Foundry outfall on the Raquette River. First-order estimates of loading to the sediments indicate that over 6,000 kg of PCBs have been discharged from the sites to the St. Lawrence, Grasse and Raquette Rivers.

Data on the concentrations of PCBs in spottail shiners also implicates all three sites as major sources of PCBs to the St. Lawrence and Grasse Rivers. Young-of-the-year shiners, which have a very limited home range close to the shoreline, were analyzed for PCBs. The highest concentrations were observed in shiners collected closest to the outfalls. This finding indicates a substantial discharge of PCBs from the three sites to the St. Lawrence and Grasse Rivers.

Limited sampling has found PCBs in terrestrial vegetation. These results provide evidence for the aerial release and deposition of PCBs. High concentrations of PCBs observed in several species of migratory and resident birds, mammals, reptiles, amphibians, and fish also provides evidence of accumulation in higher order organisms.

The release of PAHs, PCDDs, PCDFs, trace elements, and fluorides may have been and may be occurring to various degrees but has yet to be characterized at all three sites. Elevated concentrations of several PAHs and trace elements have been found in sediments downstream of the GM Foundry outfall on the St. Lawrence River and downstream of the ALCOA outfall on the Grasse River.

2. Natural resources for which U.S. Department of Interior, NOAA, the State of New York, and the St. Regis Mohawk Tribe may assert trusteeship under CERCLA have been or are likely to have been adversely affected by the discharge or release.

The areas of exposure discussed above include natural resources that are within the trusteeship of the St. Regis Mohawk Tribe, State of New York, U.S. Department of the

Interior, and NOAA. Other natural resources within the trusteeship of one or more trustees may also have been injured by the contaminants of concern. These other resources also may require investigation. The resources adversely affected are within the above trusteeships. The riverine, wetland, and adjacent terrestrial habitats serve as breeding grounds, nursery areas, and foraging areas for species managed, or that could be managed in the future, under a number of Acts.

Recreational, commercial, and tribal fisheries such as those for American eel, brown bullhead, smallmouth bass, yellow perch, and walleye have been impacted by elevated concentrations of PCBs in the tissues of fish. PCBs in at least 16 species of fish collected from the St. Lawrence and Grasse Rivers in the vicinity of the three sites have exceeded concentrations where reproductive inhibition or failure has been reported in the toxicological literature.

Individuals of various endangered species, including but not limited to the bald eagle, and waterfowl and other migratory birds may have been and/or may be adversely impacted by PCBs, PAHs, PCDDs, PCDFs, and heavy metals released into the area of exposure.

Groundwater resources used for drinking water supply, industrial, or commercial applications have been found to contain PCBs and other contaminants of concern at concentrations above human health standards. Groundwater resources in the area fall under the authority of the State of New York and the St. Regis Mohawk Tribe.

PCBs and other contaminants of concern found in vegetation samples may be limiting the use of plant species used for ceremonial and medicinal purposes by the St. Regis Mohawk Tribe. The contaminants may also be tainting these plants, which have special spiritual and cultural significance. In addition, the contaminants may be tarnishing the cultural, intrinsic, recreational, aesthetic and historic values of *Akwesasne* and the St. Lawrence region.

3. The quantity and concentration of released hazardous substances is sufficient to potentially cause injury, as used in the Federal damage assessment regulations.

PCBs are known for their persistence and ability to bioaccumulate and biomagnify in the food chain. In light of these characteristics, the primary hazard of PCBs is their chronic effect, not their acute effect. For example, an average bioconcentration factor for PCBs in fish is estimated at approximately 50,000 (i.e., concentration in fish tissue can reach 50,000 times the concentration in water). Concentrations of PCBs in tissues of aquatic organisms are generally greater than or equal to concentrations in sediment.

Injury to U.S. Department of Interior, NOAA, State of New York, and St. Regis Mohawk trust resources have been caused potentially by the toxicity of PCBs, PCDDs, PCDFs, PAHs, trace elements, and fluorides. Sublethal toxic effects on aquatic organisms have been reported in toxicological literature at PCB levels in tissue of less than 1 mg/kg and as low as 0.1 mg/kg. On the basis of surveys in the proximity of the three sites, there are at least 16 species of fish whose members carry tissue levels of PCBs in excess of 1 mg/kg.

The levels of PCBs in the edible flesh of certain species of fish caught recreationally or commercially in the areas of exposure are potentially sufficient to cause injury to trust resources because the value of such fish as a food source for humans has been reduced. Under the NRDA regulation found in 43 CFR at § 11.62(f)(1)ii), an injury to biological resources occurs if action or tolerance levels established under section 402 of the Food,

Drug and Cosmetic Act, 21 U.S.C. 342 in edible portions of organisms are exceeded, and § 11.62(f)(1)(iii), the concentration of a hazardous substance is sufficient to establish injury if it exceeds levels for which a state health agency has issued directives to limit or ban consumption. Because the levels of PCB contamination found in certain recreational fish from the St. Lawrence Basin exceeded the FDA action level of 2 parts per million the New York State Department of Environmental Conservation (NYDEC) and the New York State Department of Health (NYDOH) have issued health advisories since 1977 against the consumption of fish harvested from certain parts of the St. Lawrence Basin. In 1986, the St. Regis Mohawk Tribe issued a fish consumption advisory with the recommendation that pregnant women, women of childbearing age, children under age 15, and all other Mohawks should eat no more than one meal (one-half pound) per week of fish from any body of water in or around *Akwesasne*. As a result of elevated levels of PCBs and other toxic contaminants in fish from the St. Lawrence and Grasse Rivers, NYDEC and NYDOH have recently expanded these restrictive health advisories to include fish harvested from portions of these rivers near Massena. Health advisories and public awareness of contamination in the study area have resulted in the discontinuation of several professional fishing guide services and fish camps operated by the St. Regis Mohawk Tribe.

No commercial fisheries currently exist on the St. Lawrence River in the vicinity of the aluminum facilities. A commercial eel fishery has been restricted since 1976. The commercial eel fishery was banned in Lake Ontario in 1982 because of high tissue burdens of PCBs and other contaminants. The ban has been extended to include the St. Lawrence River in the vicinity of the three aluminum sites.

The levels of PCBs in groundwater aquifers used for drinking or irrigation in the areas of exposure are potentially sufficient to cause injury to trust resources because the value of such groundwater for humans has been reduced. Under the NRDA regulation found at 43 CFR §11.62(c)(i), an injury to a groundwater resource has resulted from the discharge of hazardous substances if the concentrations of substances are in excess of drinking water standards, established by §§ 1411-1416 of the Safe Drinking Water Act or by other Federal or State laws or regulations that establish such standards for drinking water in groundwater that was potable before the discharge or release. Concentrations of PCBs in the groundwater beneath GM Foundry, ALCOA and Reynolds Metals as well as in aquifers used by the St. Regis Mohawk Tribe have exceeded 0.1 µg/L (ie. 100 pptr). Title 6 of the New York State Official Compilation of Codes, Rules and Regulations, Part 703 pertaining to protection of human health establishes 0.1 µg/L PCBs in the groundwater as the maximum allowable concentration. The St. Regis Tribal Council Resolution No. 89-19 establishes a groundwater cleanup standard of 0.01 µg/L (ie. 10 pptr) for PCBs. Since January 1982, the St. Regis Mohawk Health Services Department has advised tribal residents of Raquette Point not to drink water from their groundwater wells. Currently, 20 households and 1 school receive bottled water.

PCBs transported from the site to terrestrial resources and habitats can elicit various biological and toxic effects in terrestrial organisms, as well. For example, 50 percent of mink that were fed diets containing PCBs at 6.7 and 8.6 mg /kg died within 6 months. Mallard ducks that have been fed PCBs have suffered higher mortality rates from a viral disease than ducks whose diet did not include PCBs.

PCDDs and PCDFs can elicit a wide variety of effects in laboratory animals, including carcinogenic and mutagenic responses. Reproductive effects, kidney and liver damage, edema, and immunosuppression have all been documented. Of the different dioxin and dibenzofuran isomers, 2,3,7,8-tetrachlorodibenzo-p-dioxin and 2,3,7,8-tetrachlorodibenzofuran are the most toxic.

PAHs can elicit a variety of toxic effects to aquatic and terrestrial organisms. Bottom-dwelling fish inhabiting areas where sediments are contaminated with PAHs have shown a high incidence of oral, dermal, and hepatic neoplasms. Benzo(a)pyrene, which was found in sediments of the St. Lawrence River off of the GM Foundry outfall, is a particular concern for terrestrial wildlife. This PAH has been shown to produce tumors in mice, rats, hamsters, guinea pigs, rabbits, ducks, and monkeys.

Trace elements can have a wide range of effects on aquatic systems and terrestrial wildlife. Juvenile salmonids are particularly sensitive to copper, cadmium, and zinc, with toxic effects evident in the low parts per billion range.

Airborne fluorides that are transported to aquatic and terrestrial habitats can be toxic to a variety of mammal, fish, and vegetation species. Cattle and other grazing animals can contract fluorosis (brittle bones and teeth) and other health problems after ingesting feed containing low levels of fluoride. Salmonids are known to avoid fish passage facilities that contain low levels of fluorides (<500 µg/l) discharged from aluminum plants. Damage to vegetation on Cornwall Island due to fluorides has been reported. In evergreens, severe fluoride damage results in defoliation and dieback.

The effects of PCDDs, PCDFs, PAHs, trace elements, and fluorides on trust aquatic and terrestrial resources associated with the St. Lawrence, Grasse and Raquette Rivers has not been thoroughly investigated.

4. Data sufficient to pursue an assessment are readily available or likely to be obtained at reasonable cost.

Available data to date clearly meet the requirements for injury in the Federal regulations (i.e., state and tribe issued warning for consumption of recreational fish; state bans on commercial fisheries; loss of use of groundwater resources). Other data strongly suggest that injury to other resources can be documented; however, additional data are needed to define and quantify injuries and determine damages. The anticipated increment of extra benefits derived from obtaining these data in terms of the precision and accuracy of the injury determination and quantification and the determination of damages clearly exceeds the cost of obtaining this data. The cost of this data acquisition together with the other anticipated costs of the damage assessment is expected to be substantially less than the anticipated damage amount determined in the Injury, Quantification, and Damage Determination phases of the damage assessment.

5. Response actions carried out or planned do not sufficiently remedy the injury to natural resources without further action.

No final remedies have been implemented with respect to the affected or potentially affected natural resources that fall under the trust of U.S. Department of Interior, NOAA, the State of New York, or the St. Regis Mohawk Tribe. Interim measures have been implemented or are underway at all three industrial facilities' sites. These measures involve reducing or eliminating pathways and sources of contaminants to the surrounding environs. Final remedies are being developed or should soon be selected for the various inactive hazardous waste sites for which General Motors, ALCOA, and Reynolds Metals are responsible, respectively. The U.S. Environmental Protection Agency and the New York State Department of Environmental Conservation are the lead enforcement agencies each directing remedial programs for different hazardous waste sites which together include portions of the St. Lawrence, Grasse and Raquette Rivers and various areas on and near each of the three industrial plant sites.

B. Information reviewed.

The sources reviewed or consulted for this Preassessment Screen Determination are listed in the attached Appendix.

V. NO POTENTIAL DAMAGES ARE EXCLUDED FROM LIABILITY

A. There are no damages currently identified in this case that resulted from releases specifically identified as an irreversible and irretrievable commitment of natural resources in an environmental impact statement or other comparable environmental analysis.

B. The releases of hazardous substances in this case have continued without interruption from their commencement through the present time and have not occurred wholly before December 11, 1980, the date of the enactment of CERCLA.

C. There are no damages currently identified in this case that have resulted from the application of a pesticide product registered under the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. §§135 - 135k.

D. There are no damages currently identified in this case that resulted from a federally permitted release, as defined by Section 101(10) of CERCLA.

E. There are no damages currently identified in this case that resulted from the release or threatened release of recycled oil from a service station dealer described in section 107(a)(3) or (4).

VI. PREASSESSMENT SCREEN DETERMINATION

Based upon the facts, data, expert opinion, and analyses cited in the foregoing sections, The U.S. Department of Interior, the National Oceanic and Atmospheric Administration, the State of New York, and the St. Regis Mohawk Tribe, hereby determine that a natural resource damage assessment in this case can and should be performed.

DATE OF DETERMINATION: May 14, 1991

The St. Regis Mohawk Tribe
The National Oceanic and Atmospheric Administration
The State of New York, Department of Environmental Conservation
The U.S. Department of the Interior

APPENDIX TO PREASSESSMENT SCREEN DETERMINATION
St. Lawrence Environment in the Vicinity of Massena, New York

REFERENCES

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